

WHAT IS CLAIMED IS:

1 1. A fiber optic receiver, comprising:
2 an opto-electronic transducer configured to generate an electrical data signal
3 in response to a received optical data signal;
4 an adjustable response preamplifier circuit coupled to the opto-electronic
5 transducer and operable to amplify an electrical data signal generated by the opto-
6 electronic transducer; and
7 a mode selection circuit coupled to an output of the preamplifier circuit and
8 configured to transmit a mode control signal to the preamplifier circuit in response to
9 a received control signal.

1 2. The fiber optic receiver of claim 1, wherein the mode selection circuit is
2 configured to transmit the mode control signal to the preamplifier circuit in response
3 to a received data rate control signal.

1 3. The fiber optic receiver of claim 1, wherein the mode selection circuit is
2 configured to transmit the mode control signal to the preamplifier circuit in response
3 to a received power mode control signal.

1 4. The fiber optic receiver of claim 1, wherein the mode selection circuit is
2 configured to modulate the mode control signal onto a common line coupled
3 between the preamplifier circuit and the post-amplifier circuit.

1 5. The fiber optic receiver of claim 4, wherein the mode selection circuit is
2 configured to modulate the mode control signal onto the common line as a single
3 pulse.

1 6. The fiber optic receiver of claim 4, wherein the mode selection circuit is
2 configured to modulate the mode control signal onto the common line as a multiple
3 pulse pattern.

1097207306260

1 7. The fiber optic receiver of claim 4, wherein the mode selection circuit is
2 configured to modulate the mode control signal onto the common line as a time-
3 varying signal.

1 8. The fiber optic receiver of claim 1, wherein the preamplifier circuit
2 comprises a mode detection circuit configured to generate a response control signal
3 for adjusting the response of the preamplifier circuit based upon the mode control
4 signal transmitted by the mode selection circuit.

1 9. The fiber optic receiver of claim 8, wherein the mode detection circuit
2 is configured to detect one or more mode control signal pulses modulated onto a
3 common line coupled between the preamplifier circuit and the mode selection
4 circuit.

1 10. The fiber optic receiver of claim 9, wherein the mode detection circuit
2 is configured to detect the one or more mode control signal pulses based upon a
3 comparison of a common line voltage with a reference voltage.

1 11. The fiber optic receiver of claim 8, wherein the mode detection circuit
2 is configured to detect a time-varying mode control signal modulated onto a common
3 line coupled between the preamplifier circuit and the mode selection circuit.

1 12. The fiber optic receiver of claim 11, wherein the mode detection circuit
2 comprises a frequency detector.

1 13. The fiber optic receiver of claim 1, wherein the preamplifier circuit is
2 configured to select one of multiple sets of operating parameters based upon the
3 mode control signal transmitted by the mode selection circuit.

1 14. The fiber optic receiver of claim 13, wherein the preamplifier circuit is
2 configured to adjust one or more bandwidth response parameters in response to a
3 bandwidth mode control signal transmitted by the mode selection circuit.

1 15. The fiber optic receiver of claim 13, wherein the preamplifier circuit is
2 configured to adjust one or more supply current operating parameters in response to
3 a power mode control signal transmitted by the mode selection circuit.

1 16. The fiber optic receiver of claim 1, wherein the mode selection circuit is
2 incorporated within a post-amplifier circuit.

1 17. The fiber optic receiver of claim 1, further comprising a receiver optical
2 sub-assembly (ROSA) comprising a fiber optic connector for coupling to a mating
3 connector of a fiber optic cable.

1 18. The fiber optic receiver of claim 17, wherein the preamplifier circuit is
2 incorporated within the ROSA.

1 19. The fiber optic receiver of claim 18, wherein the ROSA and the post-
2 amplifier circuit are mounted on a common substrate.

1 20. A fiber optic receiver, comprising:
2 a substrate;
3 a receiver optical sub-assembly (ROSA) mounted on the substrate and
4 comprising a fiber optic connector for coupling to a mating connector of a fiber optic
5 cable;

6 an opto-electronic transducer incorporated within the ROSA and configured to
7 generate an electrical data signal in response to a received optical data signal;

8 an adjustable response preamplifier circuit incorporated within the ROSA,
9 coupled to the opto-electronic transducer, and operable to amplify an electrical data
10 signal generated by the opto-electronic transducer; and

11 a post-amplifier circuit mounted on the substrate, coupled to an output of the
12 preamplifier circuit, and configured to transmit a mode control signal to the
13 preamplifier circuit over one or more common lines coupled between the
14 preamplifier circuit and the post-amplifier circuit in response to a received data rate
15 control signal.